descending channels *q*| and #2 having equal temperatures *t*| and fe, that one of these streams takes up the heat a little faster than the other and that, for example, *ti* becomes slightly less than fe- The column of gas *q*| becomes, therefore, slightly heavier than the column #2, the current *qi* commences to flow with greater energy, and its velocity increases; *.ti* commences to become sensibly less than fe, the current *q*| has a greater cooling effect than the current g2 which continues, on the contrary, to take up more heat; and, in the end, the entire stream of gases passes through the branch gi, while in the branch q_2 there will be established at the same time a reverse current which circulates as indicated by the clotted arrows (Fig. 48).

FIG. 48.

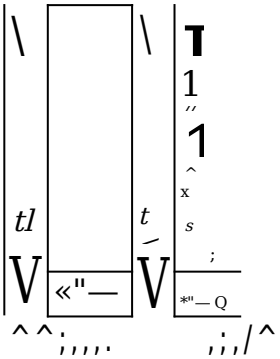

FIG. 49.

Therefore, *a current of cold gases which are being heated cannot be subdivided equally between descending channels.*

When the subdivision of a stream of cold gases is made through ascending channels, the results will be as desired. Assuming that the currents flowing as indicated in Fig. 49 were not equal, *q*|>*q*% and, consequently, fe>£i- If fo>£i, the weight of the column <72 will be less than the weight of the column gi, the current #2 will become stronger; this will cause the temperature fe to become lower; at the same time *t*| will increase in this manner and the two temperatures will be equalized; the two currents *q*| and #2

will therefore be maintained equal.

- It therefore follows that *when a current of cold gas is to be heated it should be subdivided into a number of ascending streams.*